**Session 4- Nature of Geometry, Similarity and Congruence**

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| Time | Agenda | Vocab | Resources |
| 4:00 | • Welcome    • Go over homework & questions |  |  |
| 4:15 | **Axioms (Postulates) vs. Theorems**   1. Define and Discuss the ideas of Axioms and Theorems…  * Axiom- something we accept without proof. We are so utterly convinced of it that we don’t feel the need to prove it (Self-Evident) * Theorem- something we prove.  1. Have the participants make a list of several things they accept as “Axiomatic” not necessarily related to math ie. The sun will rise tomorrow, my parents love me etc. Share with their group and then with the larger group. 2. You may want to discuss the differences in axioms based on belief systems and actions. | Axiom  Theorem |  |
| 4:30 | **Axioms for Geometric Plane**   * **Euclidean Geometry**- spend a few minutes discussing who Euclidean was and how Euclidean geometry came to be. Go over the postulates.   [**http://math.youngzones.org/Non-Egeometry/index.html**](http://math.youngzones.org/Non-Egeometry/index.html)   * **Focus on the 5th postulate also known and the Parallel Postulate**   If a straight line crossing two straight lines makes the interior angles on the same side less than two right angles, the two straight lines, if extended indefinitely, meet on that side on which are the angles less than the two right angles. **Simply Stated**- *Through a point not on a line, there is no more than one line parallel to the line.*  **ACTIVITY**: Beckmann Activity Book pp 238-239 Class Activity 10F: Angles Formed When a Line Crosses Two Parallel Lines. | Euclidean Geometry  Transversal lines |  |
| 5:15 | **Undefined and Defined Terms**   * Discussed “Undefined” and “Defined” terms * 3 undefined terms in geometry are:  1. **Point-**no actual size 2. **Line-** no thickness, one dimension, extends forever in both directions 3. **Plane-** no thickness, extends indefinitely in all directions   **ACTIVITY- Discovering Line, Plane and Point** [**http://gdbasics.com/index.php?s=dp1**](http://gdbasics.com/index.php?s=dp1) |  | Camera |
| 6:00 | **BREAK** |  |  |
| 6:15 | **Review Similar Triangles and intro Similar Quadrilaterals**   * What is a Termite’s Favorite Breakfast? sheet   **Beckmann pp 605-613 could be used for more review if needed.**  **Congruency tests for triangles**:   * Discuss the different congruency test for triangles. SSS, SSA etc. Use the following website for info. Go to the section that is titled “How To Tell if Triangles are Congruent”   [**http://www.mathopenref.com/congruenttriangles.html**](http://www.mathopenref.com/congruenttriangles.html)  **ACTIVITY: Illuminations-** [**http://illuminations.nctm.org/ActivityDetail.aspx?ID=4**](http://illuminations.nctm.org/ActivityDetail.aspx?ID=4) | Congruent  Similar | Termites Favorite Breakfast |
| 7:00 | **Congruency for Polygons-** Have participants use the following program to make a list of how you would test polygons for congruency. Then, have them also list the differences between testing congruency for polygons vs. triangles. (Could use a Venn Diagram here)  [**http://www.mathopenref.com/congruentpolygonstests.html**](http://www.mathopenref.com/congruentpolygonstests.html) |  |  |
| 7:30 | **Differentiated Lesson Plan:**   * Discuss the upcoming assignment. Have samples of differentiated lesson plans. Envision is the perfect example of a lesson that covers multiple populations. * Differentiated lesson due Session 9 |  |  |
|  | Homework:  Reflection Journal: |  |  |